

## REVIEW OF AUSTRALIAN MANTIDAE.

By NORMAN B. TINDALE, S.A. MUSEUM.

Plates xii-xxii and Text fig. 374-377.

THE Mantidae herein dealt with comprise specimens taken by me during an extended visit to Groote Eylandt and Roper River, in the Gulf of Carpentaria, together with those in the South Australian Museum.

The descriptions of many of the species previously known were based on either male or female specimens, the other sex being unknown. In a number of instances this deficiency is made good.

Four genera and sixteen species are added, bringing the number of known Australian species to seventy-six.

Some sub-family and group names recently proposed are not adopted, and the practice of some workers of naming species from immature stages is not followed. The types of the species described by Tepper are in the South Australian Museum.

### SUB-FAMILY PERLAMANTINAE.

#### **PARAOXYPILOTUS** Saussure, 1870 (*tasmaniensis*).

#### **PARAOXYPILOTUS TASMANIENSIS** Saussure.

Plate xiii, fig. 9-10, 14.

*Paraoxyphilus tasmaniensis* Sauss., Mitt. Schweiz. Ent. Ges., iii, 1870, p. 227; Mem. Soc. Genève, xxi, 1871, p. 155, pl. i, fig. 49-50.

*Hab.* Tasmania (Type), New South Wales, Victoria, South Australia, Kangaroo Island, and Western Australia.

One of the males figured is from Tasmania, the other from Lillimur, Victoria (mainland specimens have the wings shorter). The female is from Adelaide; it was captured in January, and kept under observation. It deposited an ootheca, the eggs being laid on end alternately in two rows, forming a parallel-sided structure 9 mm. long, 3 mm. high, and 1.5 mm. wide, the whole operation taking less than three hours. The insect died two days later; the colour of the front femora and coxae, in life a brilliant orange-red, faded shortly after death. Sixteen larvae were discovered dead, having emerged in from 30 to 36 days. They measured 3 mm. in length, and were miniatures of the female.

**PARAOXYPIILUS LATICOLLIS** sp. nov.

Plate xiii, fig. 11-13.

♂ Pale yellowish with black markings. Head with fore-margin of clypeus straight, hind-margin arched; facial shield narrow, near antennae excavated; frons with three prominences over ocelli; vertex nearly plain, arched in middle, coarsely punctured, without tubercles or spines; hind marginal projection behind eyes rounded; antennae black, similar to *P. tasmaniensis*. Pronotum shorter and broader than in *P. tasmaniensis*, with supra-coxal spine weaker; markings somewhat similar, but all spines and projections rounded off. Abdomen blackish. Wings hyaline, with dirty whitish and gray transverse marks and blotches, darkest on fore-margins and apex. Anterior coxae dilated, pale yellow, with base black, apex externally black, fore-margin with a spine near base and a marginal series of fine spines; femora pale yellow, apical half internally brownish with light spots; externally brown with darker punctures towards apex; tibiae and tarsi annulated black. Intermediate and posterior legs straw-coloured, annulated brownish-black. Length, 13.5 mm.

♀ Dark brown. Head large, broadly triangular, vertex strongly arched, wide, without spines; clypeus with fore-margin serrated, ocelli very small, prominences of frons weak. Antennae very fine, short. Pronotum almost as wide as long, similar to male, margin with a series of fine spines. Abdomen more pear-shaped than in female of *P. tasmaniensis*, sides only weakly serrated, margins of segments not markedly raised along median line, terminal one triangular. Anterior legs very strong, coloured and marked as in male. Length, 15 mm.

*Hab.* South Australia: Macdonnell Ranges (Captain S. A. White), Lake Callabonna (A. Zietz), Leigh Creek, Umberatana; Western Australia: Cunderdin. Types, I. 14050.

Allied to *P. tasmaniensis*. In the male the head is unarmed, pronotum wider, less armed, and wings much shorter. The female is much broader, head larger, unarmed, pronotum broader and abdomen narrower, less suddenly constricted before apex, and the margins quite different.

**PARAOXYPIILUS KIMBERLEYENSIS** Sjöstedt.

*Paraoxyphilus kimberleyensis* Sjöst., Ark. f. Zool., xi, 1918, p. 5, pl. iii, fig. 5-7; pl. v, fig. 1.

*Hab.* North-West Australia: Kimberley district (Type female), Fortescue River (W. D. Dodd).

♂ Brownish-black. Head as in female, eyes and ocelli more prominent, ocular spines somewhat less rounded. Pronotum triangular, similar to female, but somewhat rounded at posterior margin. Wings much longer than body, dark brown, hyaline. Anterior legs orange and black, marked as in female; posterior legs light-brownish. Length, 14 mm. Type, I. 14053.

**PARAOXYPILOTUS FLAVIFEMUR** Sjöstedt.

*Paraoxyphilus flavifemur* Sjöst., Ark. f. Zool., xi, 1918, p. 3, pl. i, fig. 1a-1d; pl. iv, fig. 3.

*Hab.* Queensland, Northern Territory.

**PARAOXYPILOTUS ARMATUS** Giglio-Tos.

Plate xii, fig. 7-8.

*Paraoxyphilus armatus* Gigl.-Tos, Gen. Ins., fasc. 144, 1913, p. 5.

♂ Brownish. Head small, wider than in *P. tasmaniensis*; ocular spines very large and strong. Pronotum well spined, less so than in female, median ridge weakly developed as five isolated spines. Wings long, whitish, hyaline, with veins faintly brown. Anterior coxae strongly developed, with a marginal series of about eight strong spines, with smaller spines between; femora weaker than in female, outer face brownish, inner face light brown. The posterior femora are blackish and tibiae and tarsi light brown. Length, 15 mm. Type male, I. 14054.

*Hab.* Queensland: Thursday Island (Type female), Kuranda; Northern Territory: Groote Eylandt, Melville Island, Daly River.

This species came to lights in my camp on Groote Eylandt on a sultry night in January, in company with hundreds of other insects. The type male figured is from Groote Eylandt, the female from Daly River.

**PARAOXYPILOTUS VERREAUXII** Saussure.

Plate xii, fig. 5-6.

*Paraoxyphilus verreauxii* Sauss., Mém. Soc. Genève, xxi, 1871, p. 157; l.c. xxiii, 1872, p. 77; Giglio-Tos, Gen. Ins., fasc. 144, 1913, p. 5, pl. i, fig. 2.

*Hab.* Tasmania (Type), Queensland, Magnetic Island, South Australia.

**PARAOXYPILOTUS INSULARIS** sp. nov.

♀ Black with pale brownish markings. Head broad, triangular, vertex arched; fore-margin of clypeus nearly straight, sides diverging, hind-margin

strongly arched; ocelli small, connected by a wide transverse V-shaped ridge as in *P. verreauxii*; above ocelli a small ridge causing a rounded depression on frons; vertex without spines, except posterior marginal spine, which is strongly developed. Pronotum the shape of *P. verreauxii*, tubercles, depressions and elevations absent or ill-defined, scarcely any trace of a median ridge except at posterior extremity, where there is a single large arched elevation, supra-coxal spine strong, margins of pronotum possessing only very feeble spines. Abdomen long, narrow, oval, margins serrated towards posterior extremity, terminal segment triangular, borders not rugose. Anterior coxae weaker than in *P. verreauxii*, not dilated, light flesh-coloured, with several black spots at base, no marginal spines; femora marked externally with dense black spots and strigae, internally dull black with several flesh-coloured blotches on margin; tibiae and tarsi black. Intermediate and posterior legs annulated pale brown. Length, 16 mm.

*Hab.* Northern Territory: Groote Eylandt (N. B. Tindale). Type, I. 14052, unique.

Close to *P. verreauxii*, but distinguished by its less spiny head, arched vertex, and plainer pronotum, with very different median ridge. The abdomen is more slender and not wrinkled. The front coxae are also very different, being quite unarmed. It was taken in the sweep net when beating shrubs on the borders of a creek.

**MYRMECOMANTIS Giglio-Tos, 1913 (atra).**

*Hab.* Australia.

**MYRMECOMANTIS ATRA Giglio-Tos.**

*Myrmecomantis atra* Gigl.-Tos, Gen. Ins., fasc. 144, 1913, p. 6.

*Hab.* New South Wales.

**METOXYPILUS Giglio-Tos, 1913 (spinosus).**

*Hab.* New Guinea, Australia.

**METOXYPILUS LOBIFRONS Stal.**

*Paraoxypilus lobifrons* Stal., Bih. Svenska Akad., iv, 1877, p. 8; Westwood, Rev. Mant., 1889, p. 4; Wood-Mason, Cat. Mant., 1889, p. 2.

*Hab.* Queensland.

**GYROMANTIS Giglio-Tos, 1913 (kraussii).**

*Hab.* Australia.

**GYROMANTIS KRAUSSII** Saussure.

*Haania kraussii* Sauss., Mém. Soc. Genève, xxi, 1871, p. 153; *Paraoxypilus kraussii* Stal., Bih. Svenska Akad., iv, 1877, p. 8.

*Hab.* Western Australia, South Australia, and Central Australia, also from the junction of the Fitzroy and Margaret Rivers, North-west Australia.

**GYROMANTIS OCCIDENTALIS** Sjöstedt.

*Gyromantis occidentalis* Sjöst., Ark. f. Zool., xi, 1918, p. 8, pl. i, fig. 2a-2d, 3a-3c.

*Hab.* North-west Australia (Type), Northern Territory, as far south as Tennant Creek.

**PHTHERSIGENA** Stal., 1871 (*conspersa*).

*Hab.* Australia.

**PHTHERSIGENA CONSPERSA** Stal.

*Phthersigena conspersa* Stal, Oefv. Vet.-Akad. Förh., xxviii, 1871, p. 401;

*Haania conspersa* Sauss., Mém. Soc. Genève, xxiii, 1872, p. 76; *Paraoxypilus conspersus* Stal, Bih. Svenska Vet.-Akad., iv, 1877, p. 9.

*Hab.* Queensland.

**PHTHERSIGENA MINOR** Sjöstedt.

*Phthersigena minor* Sjöst., Ark. f. Zool., xi, 1918, p. 10, pl. ii, fig. 1a-1e.

*Hab.* North-west Australia.

**PHTHERSIGENA CENTRALIS** Giglio-Tos.

*Phthersigena centralis* Gigl.-Tos, Bull. Soc. Ent. Ital., 1914, p. 32.

*Hab.* Central Australia.

This species is about the size of *P. minor*, but the pronotum is relatively larger.

**GLABROMANTIS** Sjöstedt, 1918 (*nebulosa*).

Sjöst., Ark. f. Zool., xi, 1918, p. 12.

*Hab.* Australia.

The females of this genus have the wings short, reaching only to about three-quarters length of abdomen. The head is broad and the eyes less prominent than in male. The antennae are very fine and filamentous, reaching to

the end of pronotum. Pronotum broad, slightly compressed towards posterior extremity. Anterior coxae dilated near base, femora broad, tibial spur shorter, not projecting from outer margin of femur when closed, as in male. Legs annulated dark-brown.

The female of *G. unicornis* has very powerful front legs, which are jet black on their inner face.

### GLABROMANTIS NEBULOSA Sjöstedt.

*Glabromantis nebulosa* Sjöst., Ark. f. Zool., xi, 1918, p. 13, pl. ii, fig. 2a-2c.

*Hab.* North-west Australia.

### GLABROMANTIS UNICORNIS sp. nov.

Plate xii, fig. 1-2.

♂ Gray, with blackish punctures, spots, and marks. Head somewhat broad, black; eyes oval, projecting outward and forward, sides somewhat compressed; clypeus four-sided, divided across middle by a longitudinal keel; facial shield twice as wide as high, arched strongly in middle, the summit projecting outward in a conspicuous spine-like process; frons rounded over ocelli, ocelli not prominent; vertex plain, a transverse line at middle, and also a median line; hind-margin with a strong, rounded, ocular lobe. Antennae long, strong, basal joint the largest, second and third smaller, fourth very small, the following joints gradually longer. Pronotum  $1\frac{1}{3}$  times long as wide, widest at middle, before middle excavated, front-margin arched; at three-fourths constricted; hind-margin rounded off; a median line conspicuous, a lateral groove before middle and a shallower groove at three-fourths; between antemedian groove and fore-margin a central depression; markings grayish-black. Anterior coxae broadest at base, pale yellowish, with dark punctures on outer side; femora weak, pale yellow, outwardly spotted black, with three discoidal spines, the third small and inconspicuous; inner margin with a large spine, then a fine comb of nine spines, followed by four separated spines, of which the third is largest; outer margin with five spines, the fifth close to apex; tibial spine long, projecting above border of femur when leg is closed, tibia armed on inner margin near apex, with a fine comb of nine spines; outer margin with only traces of a row of spines; first tarsal joint longer than rest together. Legs yellowish with darker markings. Length, 19 mm.

♀ Light brown with black markings. Broader than male. Head and pronotum as in male. Antennae short and filamentous. Wings short, reaching to two-thirds length of abdomen, opaque, strongly marked dirty yellow and black.

Anterior coxae dark yellowish, with black spots; femora strong, inner face shining jet black, spines as in male. Legs as in male. Length, 18.5 mm.

*Hab.* South Australia: Murray River (H. S. Cope), Pungonda (A. Dubbe), Tintinara, Murat Bay, Illamurta (Horn Expedition), Lake Frome (J. N. McGilp). Types, I. 14046.

This species is distinguished from *G. nebulosa* Sjöst. by the peculiar head and the projection on facial shield. The male from Lake Frome is small, measuring only 12 mm. in length. We have seven males and four females.

### **GLABROMANTIS UNICORNIS PALLIDIFEMUR** subsp. nov.

♂ Light brown with gray markings. Head very wide, with eyes prominent. Facial shield twice as wide as high, arched above, with apical spine absent or weakly developed, fore-margin straight, at each end of fore-margin a yellowish spot; frons with three prominences over ocelli, the median one well forward, projecting, well rounded; ocular spine pointed, not a rounded lobe. Antennae long, nearly reaching end of abdomen. Pronotum  $1\frac{1}{4}$  times long as wide, oval, sides arched, less conspicuously constricted towards posterior extremity than in *G. unicornis*, black with brownish markings; sometimes a faint light-coloured spot on each side of middle of pronotum below transverse groove. Wings long; elytra hyaline, suffused dirty whitish and black marks; hind-wings hyaline, fore-margin darker. Anterior legs yellowish-brown, externally marked with darker spots; intermediate and posterior legs annulated light-brown. Length, 19 mm.

♀ Larger than male. Pale yellowish, with brownish-black spots and markings. Head large, apex of facial shield forming a small projection, ocelli very small. Pronotum longer than in *G. unicornis*, arched at middle, constricted strongly at three-fourths; markings as in male. Elytra opaque, dirty gray, with black markings; hind-wings hyaline. Anterior coxae pale yellow; femora pale yellow, mottled brownish; legs yellowish, annulated brown-black. Length, 22 mm.

*Hab.* South Australia: Kingoonya (R. Harvey), Mount Painter (H. G. Stokes), North East Corner (F. Parsons). Types, I. 14048.

This has been placed as a race of *G. unicornis*; it has a different shaped head, longer pronotum, and in female pale front femora and tibiae. We have three males and two females.

### **GLABROMANTIS MELANIA** sp. nov.

Plate xii, fig. 3.

♂ Dark reddish-brown with dull black markings. Head smaller than in *G. unicornis*; facial shield arched on posterior margin and with a V-shaped

median notch; frons elevated, truncated, prominences well rounded, vertex arched in middle, posterior ocular lobes rounded, small. Antennae fine, about half-length of body. Pronotum black, with reddish-brown prominences, about as long as wide, broadest at middle, constricted before posterior margin, fore-margin gently rounded, surface of pronotum with a median line, a transverse depression before middle, a raised circular area in front of this, with a depressed centre, a transverse depression, and two oblique raised lines on posterior half, forming a raised, equilateral triangle-shaped area. Wings longer than body, narrow, hyaline, with closely set brownish-black markings. Anterior coxae black at base, then pale reddish, at apex black; femora strong, outwardly black, inner face light reddish; tibiae black, tarsi brown; legs reddish-brown. Length, 14.5 mm.

*Hab.* Northern Territory: Pine Creek. Type, I. 14044, unique.

Distinct, by its dark colour, notched facial shield, short body, long slender wings, and bright coloured fore-coxae and femora. It is very different from the figure of *G. nebulosa*, especially in the arched head, less prominent eyes, different contour of pronotum, and the red and black anterior legs.

#### **AMORPHOSCELIS Stal, 1871 (annulicornis).**

*Hab.* Africa, extending to India and Borneo..

#### **AMORPHOSCELIS PELLUCIDA Westwood.**

*Amorphoscelis pellucida* West., Rev. Mant., 1889, p. 28.

*Hab.* Westwood says of this species: "Habitat Adelaida (Fortnum) in Mus. Hope; alterum e Ceylonia (Thwaites) omnino simillimum accepi." It is probable, however, that the species has been recorded from Australia in error.

#### **CLIOMANTIS Giglio-Tos, 1913 (cornuta).**

*Hab.* Australia.

#### **CLIOMANTIS CORNUTA Giglio-Tos.**

Plate xii, fig. 4.

*Cliomantis cornuta* Gigl.-Tos, Gen. Ins., fasc. 144, 1913, p. 12.

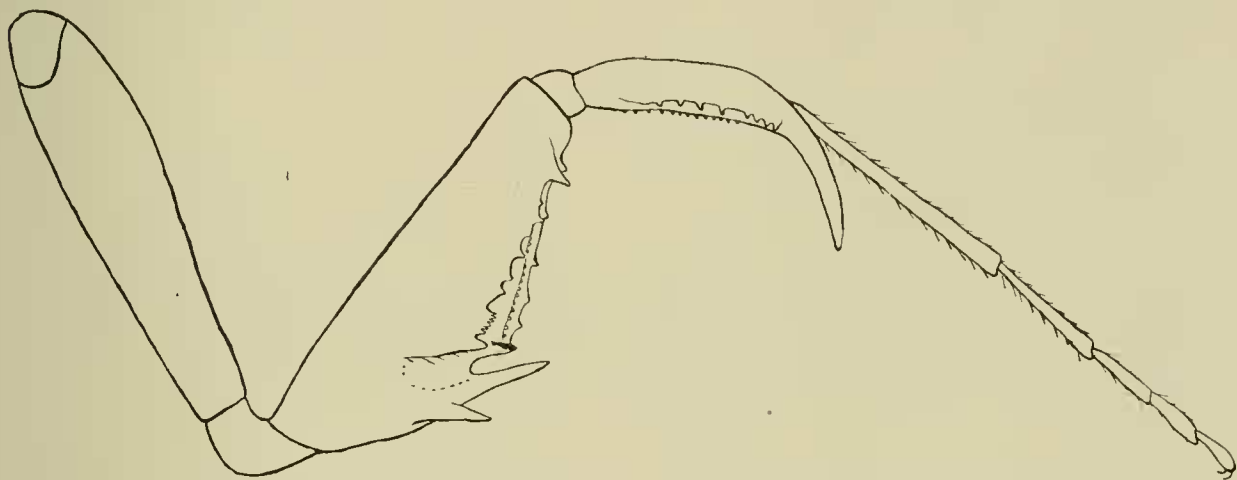
*Hab.* Queensland, Northern Territory.

There are ten males in the Museum collection. The specimen figured is from Darwin; one was taken at lights at Roper River. The female is probably apterous.

**CLIOMANTIS DISPAR** sp. nov.

Plate xiii, fig. 15, and text figure 374.

♂ Dull brown. Head triangular, wide, eyes rounded, clypeus transverse; facial shield strongly transverse; ocular spines less prominent than in *C. cornuta*, and blunt pointed; frons bifurcate. Antennae pale brown, basal joints darker. Pronotum about twice width of head in length, widest anteriorly, sides constricted to middle, where it is slightly dilated, and again constricted before posterior extremity; a slight raised median keel is divided by a transverse shallow groove near middle of pronotum. Abdomen short. Forewings longer than abdomen, hyaline, with numerous fuscous markings more dense along fore-margin; a dark median streak between the veins in basal third of wing; hindwings very long, hyaline, with fuscous markings on fore-margin. Anterior

Fig. 374. *Cliomantis dispar* sp. nov. Left anterior leg of male.

femora somewhat strongly dilated, armed with three discoidal spines, an internal marginal row of thirteen spines, the first strong, the next six forming a fine comb, then six separated spines, of which the apical one is strongest; an exterior marginal series of five spines; there is also in femoral groove a series of about thirteen very fine spines; tibiae armed with an internal marginal row of eight spines, the first four separate, the remainder together at base of tibial spine, also an external marginal series of thirteen very minute spines. Legs long and slender, dark brown. Length, 15 mm.

♀ Grayish brown. Head larger than in male, eyes very prominent, clypeus less transverse, facial shield broad, slightly wider than high. The margin of pronotum less sinuate. Wings absent. Abdomen long, slightly dilated, mottled gray brown, tending to brown at posterior margin of each segment. Legs as in male. Length, 14 mm.

*Hab.* South Australia: Parachilna (Natural History Expedition), Tarcoola, Barton (A. M. Lea), Farina, Ooldea, Todmorton (Captain S. A. White); Central Australia: Carraweena, Trinity (Museum Exped., 1916), Macdonnell and Everard Ranges (Captain S. A. White). Type male, I. 14043; type female, I. 14045.

This species, the males of which we have a long series, appears to be common in the dry parts of the interior of South Australia. The type male is from Parachilna, in the Flinders Range. The female is described from a single specimen, apterous, but apparently mature, taken by Mr. A. M. Lea at Barton, while beating shrubs. The males frequently come to lights.

**COMPSOTHESPIS** Saussure, 1872 (anomala).

*Hab.* Africa, with one species recorded from Australia.

**COMPSOTHESPIS AUSTRALIENSIS** Wood-Mason.

*Compsothespis australiensis* Wood-Mason, Cat. Mant., 1889, p. 7, fig. 4; Westw., Rev. Mant., 1889, p. 32, pl. xii, fig. 11.

*Hab.* Queensland and "North Australia."

SUB-FAMILY EREMIAPHILINAE.

This subfamily is represented in Australia by the genus *Orthodera*. The species are so extremely variable that it is difficult to find satisfactory characters on which to separate them.

**ORTHODERA** Burmeister, 1838 (ministralis).

*Hab.* This genus is confined to Australia, New Guinea, and New Zealand.

**ORTHODERA MINISTRALIS** Fab.

Plate xiv, fig. 18-20, and text figure 375.

*Mantis ministralis* Fab., Syst. Ent., 1775, p. 277; *Paraoxypilus* ? *ministralis* Sauss., Mém. Soc. Genève, xxi, 1871, p. 158; *Orthodera ministralis* Wood-Mason, Cat. Mant., 1889, p. 20; *Orthodera prasina* Burmeister, Handb. Ent., ii, 1838, p. 529; Sauss., Mém. Soc. Genève, xxi, 1871, p. 15; Tepper, Trans. Roy. Soc. S.A., xxix, 1905, p. 238; *Mantis rubrocoxata* Serville, Hist. Nat. Orth., 1839, p. 203; *Mantis hobsonii* Le Guillou, Rev. Zool., 1841, p. 293; *Bolidena hobsonii* Blanchard, Voy. au Pole Sud, iv, 1853, pl. i, fig. 7; *Mantis gunnii* Le Guill., l.c., p. 293; *Orthodera laticollis* Brancsik, Jahresh. Nat. Ver. Trenesen. Kom., 1896, p. 246, pl. vii, fig. 5a; *Orthodera australiana*

Giglio-Tos, Bull. Soc. Ent. Ital., 1916, p. 107; *Orthodera gracilis* Giglio-Tos, l.c., p. 107.

*Hab.* Queensland, New South Wales, Victoria, Tasmania, South Australia, Kangaroo Island, Central Australia, Western Australia, North-west Australia, Northern Territory, Groote Eylandt.

An examination of ninety specimens shows a wide range of variation, and this variation is responsible for the extensive synonymy. The illustrations are a selected series of eight male and twenty female pronoti arranged to show the great variation in the shape of pronotum and head.

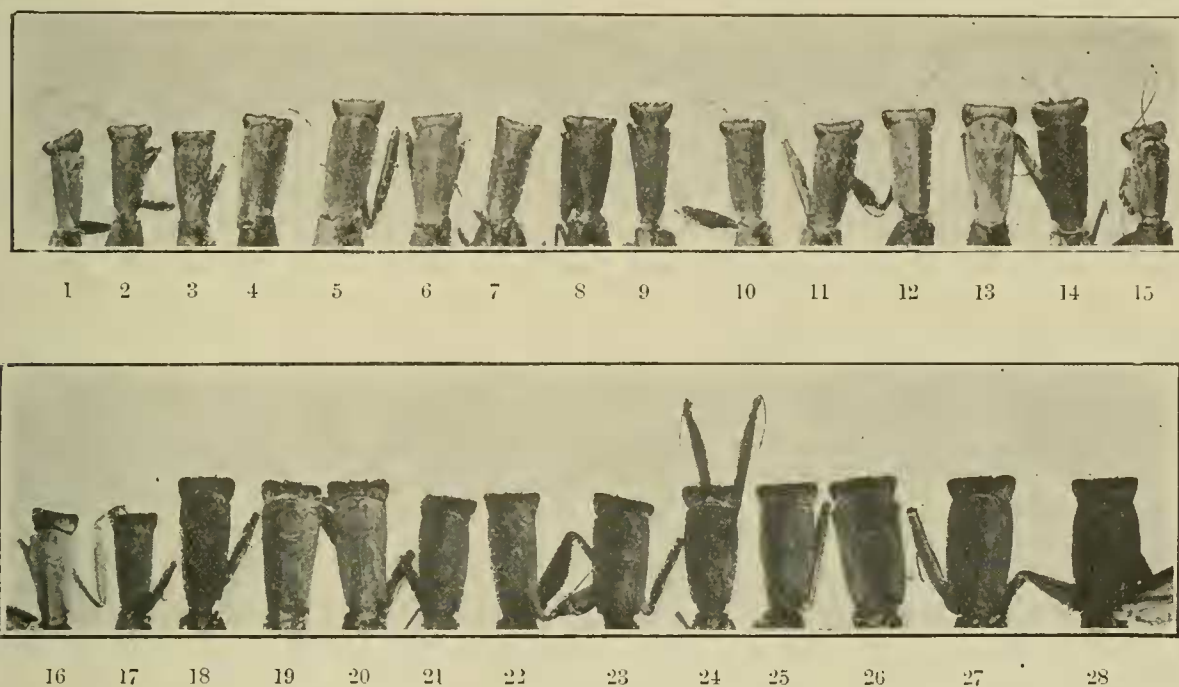


Fig. 375. 1-28. *Orthodera ministralis* Fab. (1, male, Derby, N.W.A.; 2, male, Fortescue River, N.W.A.; 3, female, Flinders Range, S.A.; 4, female, Darke's Peak, S.A.; 5, female, Port Augusta, S.A.; 6, female, S.A.; 7, male, Ellery's Creek, C.A.; 8, female, Karoonda, S.A.; 9, male, Cairns, N.Q.; 10, male, Tasmania; 11, female, Kewell, V.; 12, male, Dalby, Q.; 13, male, Darwin, N.T.; 14, female, Darwin, N.T.; 15, male, Groote Eylandt); 16-28, females (16, Tennant's Creek, N.T.; 17, Victoria Desert, C.A.; 18-19, Groote Eylandt; 20, Cairns, N.Q.; 21-22, Dalby, Q.; 23, Dorrigo, N.S.W.; 24, Tasmania; 25-26, Adelaide, S.A.; 27, Ooldea, S.A.; 28, Queensland).

Nos. 1 and 2 are small, and agree with small females (e.g., Nos. 3, 16-17) in having no femoral spot, but Nos. 4 and 8 are intermediate, possessing a small spot. No. 7, which is otherwise inseparable from No. 3, has a large black femoral spot extending over the whole middle area of the femora. No. 9 is more distinct, but females from the same locality are inseparable from the others. No. 10 is *O. hobsonii*, and No. 11 is very close, except that the facial shield is less transverse. No. 9 has the narrowest and longest pronotum, and approaches the figure of *O. straminea* in the shape of the eyes and head. The females show great variation in the proportions of pronotum, generally speaking, southern examples being

broader, but No. 28, from Queensland, is by far the broadest. No. 24 is *O. hobsonii*, female, but differs but little from No. 25, which is a mainland specimen.

This species is wide-ranging, but has not developed clearly defined races. The name, *O. ministralis hobsonii*, may be retained for Tasmanian examples, which appear to have the facial shield transverse.

### ORTHODERA MARGINATA Saussure.

Plate xiv, fig. 16-17.

*Orthodera marginata* Sauss., Mém. Soc. Genève, xxxiii, 1872, p. 8, pl. viii, fig. 1; Wood-Mason, A.M.N.H. (4), xx, 1877, p. 76; Tepper, Trans. Roy. Soc. S.A., xxix, 1905, p. 238.

*Hab.* New South Wales, South Australia, Central Australia, and Western Australia.

This species is distinguished by its slender pronotum and the orange fore-margin of elytra. The male figured is from Adelaide, the female from Mount Painter. We have nearly thirty specimens, which do not show any variation towards the other members of the genus.

### ORTHODERA BURMEISTERI Wood-Mason.

Plate xiv, fig. 21-22.

*Orthodera burmeisteri* Wood-Mason, Cat. Mant., 1889, p. 21; *Orthodera longicollis* Brancs., Jahresb. Nat. Ver. Trenes., 1897, p. 61, pl. i, fig. 6.

♀ Allied to *O. ministralis*, but differs in being longer and more slender. Head very similar, wider, vertex arched, eyes bluntly pointed; facial shield with corners rounded, ocelli less prominent. Pronotum long, margins nearly smooth, pale silvery green, a median area reddish (in dried specimen). Wings long, pale silvery green, hyaline, fore-margin of front wings reddish. Legs orange, anterior femora with a green area on inner face. Length, 38 mm.

*Hab.* New Guinea (Port Moresby, type); Queensland: Dalby (Mrs. F. H. Hobler).

Our single female agrees very well with the description of this species, which was first recorded from New Guinea. The measurements given in the original description agree, except that in the present specimen posterior femora and tibiae are each 1 mm. shorter.

**ORTHODERINA Sjöstedt, 1918 (straminea).****ORTHODERINA STRAMINEA Sjöstedt.**

*Orthoderina straminea* Sjöst., Ark. f. Zool., xi, 1918, p. 16, pl. iv, fig. 4a-e.

*Hab.* North-west Australia, Northern Territory.

## SUB-FAMILY IRIDOPTERIGINAE.

**BOLBE Stal, 1877 (pygmea).**

*Hab.* Australia.

**BOLBE PYGMEA Saussure.**

*Ameles pygmea* Sauss., Mém. Soc. Genève, xxi, 1871, p. 299; *Bolbe pygmea* Kirby, Cat. Orth. Mant., 1904, p. 226; Sjöstedt, Ark. f. Zool., xi, 1918, p. 17.

*Hab.* Queensland, Western Australia, and North-west Australia (Sjöstedt), Northern Territory.

We have three males of this small mantis, from Darwin and Daly River.

**BOLBE MAIA sp. nov.**

♂ Small, dark brown with lighter markings. Head large, black; frons, from above, prominent, with ocelli forming three projections, vertex almost straight, broad, and smooth. Antennae more than half length of body, black, with numerous setae. Pronotum  $1\frac{1}{2}$  times long as broad, widest before middle, and constricted at three-quarters. Anterior and posterior margins rounded, a transverse furrow, indistinct before middle, surface of pronotum smooth, in some specimens with a slight metallic lustre. Wings hyaline, with transverse black markings, giving wings dark-gray appearance. Abdomen black. Anterior legs wholly bright orange-brown. Intermediate and posterior legs dull brown. Length, 8 mm., of elytra, 8.5 mm.

*Hab.* Groote Eylandt, Northern Territory (N. B. Tindale). Type, I. 14056.

This species, which in life is dark brown, flew freely to lights in my camp at Yetiba, Groote Eylandt, on sultry nights, all through the "wet" season (December to March). It was very active, flying and running around the table and the rim of the lamp, often capturing small flies and other insects which had been attracted to the light. Owing to its quickness it was very difficult to capture. It is the smallest mantis so far known. "Maia" is derived from a Groote Eylandt (Ingura) native word meaning "active." We have a single male from Darwin.

**BOLBE NIGRA** Giglio-Tos.

*Bolbe nigra* Gigl.-Tos, Bull. Soc. Ent. Ital., 1914, p. 35.

*Hab.* South Australia, Central Australia.

The female is wingless. We have a long series of the males of this species. The inner face of front coxae and femora is jet black in both sexes. In 1912, Werner<sup>(1)</sup> identified two larvae, probably of this species, as *Bolbe fuliginosa*.

**BOLBE PALLIDA** sp. nov.

♂ Pale brownish. Close to *B. nigra*, but smaller. Head moderate, with face almost as high as broad; eyes rounded, large, not projecting, the inner margins (viewed from in front) straight; ocelli less prominent, the central ocellus smaller and more rounded, vertex nearly straight, well rounded, forming a transverse ridge behind ocelli. Pronotum much wider than in the other species of genus; a transverse median and postmedian suture dividing pronotum into a number of low rounded ridges. Wings much longer in proportion, pale brownish, hyaline, with light brown veins and veinlets. Anterior legs wholly pale brown, with a few scattered darker brown marks on exterior face of femora. Median and posterior legs pale brown, faintly annulated darker brown. Length of body, 11 mm., of elytra, 13 mm.

*Hab.* Central Australia: Mount Parry (Prof. R. Tate, October, 1889), Finke Gorge (Horn Expedition, 1894), Farina (Museum Expedition, 1916). Type, I. 14055.

We have three males of this small mantis, which is easily distinguished by the peculiar head and eyes, long wings, and pale anterior legs.

**NEOMANTIS** Giglio-Tos, 1914 (*australis*).

*Hab.* Australia.

**NEOMANTIS AUSTRALIS** Saussure and Zehnter.

*Tropidomantis australis* Sauss. & Zehn., Grandid. Hist. Madag. Orth., i, 1895, p. 169; *Neomantis australis* Giglio-Tos, Bull. Soc. Ent. Ital., 1914, p. 48.

*Hab.* Murray Island (Torres Straits).

**STENOMANTIS** Saussure, 1871 (*novae-guineae*).

*Stenomantis* Sauss., Mém. Soc. Genève, xxi, 1871, p. 311.

*Ciulfina* Giglio-Tos, Bull. Soc. Ent. Ital., 1914, p. 64.

*Nanomantis biseriata*, the type of *Ciulfina*, is a subspecies of *N. novae-guineae*, and thus *Ciulfina* is a direct synonym of *Stenomantis*.

---

(1) Werner, Fauna Sudwest Austral., 1912, p. 49.

**STENOMANTIS NOVAE-GUINEAE** Haan.

*Hab.* New Guinea.

**STENOMANTIS NOVAE-GUINEAE BISERIATA** Westwood.

Plate xv, fig. 27-28.

*Nanomantis biseriata* Westwood, Rev. Mant., 1889, p. 32; *Stenomantis novae-guineae brevis* Werner, Fauna Sudw. Aust., iv, 1912, p. 52.

*Hab.* North-west Australia (Type), Northern Territory, Melville Island, Groote Eylandt, Queensland.

The length of pronotum varies considerably in the series examined; there is only one race, however, represented from Australia. The specimens figured are from Cairns.

**STENOMANTIS LITURGUSA** Giglio-Tos.

*Ciulfina liturgusa* Gigl.-Tos, Bull. Soc. Ent. Ital., 1914, p. 64.

*Hab.* Queensland, South Australia.

**NANOMANTIS** Saussure, 1871 (*australis*).

*Hab.* Australia and the Malay Archipelago.

**NANOMANTIS AUSTRALIS** Saussure.

*Nanomantis australis* Sauss., Mém. Soc. Genève, xxi, 1871, pp. 117, 311, pl. vii, fig. 64.

*Hab.* Australia.

## SUB-FAMILY SIBYLLINAE.

**GONATISTELLA** Giglio-Tos, 1914 (*nigropicta*).

*Hab.* Australia.

**GONATISTELLA NIGROPICTA** Westwood.

*Theopompa nigropicta* Westw., Rev. Mant., 1889, p. 29, pl. ii, fig. 6; *Gonatistella nigropicta* Giglio-Tos, Bull. Soc. Ent. Ital., 1914, p. 80.

*Hab.* Australia.

## SUB-FAMILY MANTINAE.

**ARCHIMANTIS** Saussure, 1869 (*latistyla*).

*Hab.* Australia.

**ARCHIMANTIS LATISTYLA Serville.**

Plate xvi, fig. 32; xix, fig. 47.

*Mantis latistylus* Serv., Ins. Orth., 1839, p. 179; McCoy, Prod. Zool. Vict., xiii, 1886, pl. cxxx; *Archimantis latistylus* Sauss., Mém. Soc. Genève, xxi, 1871, p. 39.

*Hab.* South Australia and Western Australia.

**ARCHIMANTIS SOBRINA Saussure.**

Plate xvi, fig. 31.

♂ Smaller than female. Pale green in life. Head smaller, ocelli prominent, antennae long. Pronotum long and broad, shape of female. Wings long, hyaline, immaculate, a greenish tinge on fore-margins. The elytra beneath have at base an anterior marginal black patch, and the reticulation on rest of margin is black. Cerci flat, narrower than in female, the apical joint very long and blunt pointed. Length of body, 90 mm., of elytra, 110 mm.

*Hab.* Western Australia, South Australia, Western Queensland, Northern Territory.

The female figured is from Cunnamulla, and is 99 mm. in length. This is a large, stout species, and seems to be most common in the interior. Males are very similar to those of *A. brunneriana*, but the front femora are much narrower and the pronotum longer.

**ARCHIMANTIS MINOR Giglio-Tos.**

Plate xviii, fig. 39.

*Archimantis minor* Giglio-Tos, Bull. Soc. Ent. Ital., 1916, p. 43.

*Hab.* Western Australia.

This is a rather small species, of which we have four females from Beverley. The pronotum is very similar to *A. sobrina*, but the wings are short, brown, and with a black discoidal spot.

**ARCHIMANTIS BRUNNERIANA Saussure.**

Plate xviii, fig. 40.

*Archimantis brunneriana* Sauss., Mém. Soc. Genève, xxi, 1871, p. 277; l.c., 1873, pl. viii, fig. 4.

♀ Larger than male. Brown, with darker markings. Head larger, eyes more depressed, divergent, ocelli very small, widely separated, antennae short. Pronotum like male, but broader, and with anterior margins more serrated.

Wings longer than pronotum; elytra opaque, brown, with well developed ante-median and median black spots, reticulations black, fore-margin at base beneath black, and reticulations along margin black, rest of elytra rich brown; hind-wings hyaline, with fore-margin brown. Abdomen light brown, cerci long, flattened, broad, the last segment round. The anterior coxae with five rather small spines on fore-margin. Legs brown. Length of body, 95 mm., of pronotum, 34 mm., of expanded elytra, 76 mm. Murray River (H. S. Cope, Type female, I. 14066).

*Hab.* Queensland, Northern Territory, Central Australia, and South Australia.

The males have a broader pronotum than *A. latistyla*, and are generally green when alive. The females in our long series are all brown.

### ARCHIMANTIS QUINQUELOBATA *Tepper.*

Plate xvii, fig. 35-37.

*Fischeria quinquelobata* Tepper, Trans. Roy. Soc. S.A., 1905, p. 238; *Rheomantis quinquelobata* Giglio-Tos, Bull. Soc. Ent. Ital., 1916, p. 44.

♂ Smaller than female. Pronotum more slender, anterior margin with only very fine serration. Wings long, complete, the elytra with anterior half opaque, brown, with two black spots at one-third, the posterior portion hyaline; hind wings hyaline, brownish on anterior margin and apex. Anterior coxae armed with four (sometimes five) triangular teeth. Length of body, 77 mm., of elytra, 86 mm. Mount Painter (H. G. Stokes, Type male, I. 14067).

*Hab.* South Australia, Central Australia.

The specimen described as a male by Tepper is really a small female. The sexes are very different. The male figure is from Mount Painter, the female (a cotype) from the Fraser Range, where the native name is said to be "kamuan." Giglio-Tos<sup>(2)</sup> has proposed a genus *Rheomantis* for this species, which, however, appears to be a typical *Archimantis*.

### ARCHIMANTIS ARMATA *Wood-Mason.*

Plate xvi, fig. 33.

*Archimantis armata* Wood-Mason, Ann. Nat. Hist. (4), xx, 1877, p. 76; Proc. Zool. Soc. Lond., 1878, p. 584, pl. xxxvi, fig. 2-2a.

♂ As large as female, brown. Head smaller, antennae very long and stout at base. Pronotum as long as in female, very slender, somewhat dilated near anterior extremity, posteriorly to dilatation very slender and constricted nearly to posterior margin, margins entirely plain, surface of pronotum smooth.

---

(2) Giglio-Tos, Bull. Soc. Ent. Ital., 1916, p. 44.

Wings long, hyaline, elytra with a narrow fore-marginal opaque area, diminishing towards apex, and with two black spots, not very well defined. Anterior legs shorter and finer than in female. Length of body, 98 mm., of pronotum, 35 mm., of elytra, 56 mm. Cairns (A. M. Lea, Type male, I. 14068).

*Hab.* Queensland.

We have a pair of this species from Cairns. The female agrees with Wood-Mason's figure, except that the spines of pronotum are less densely set and somewhat more blunted in appearance. The apical joint of the cerci is broad and twice as long as wide.

### **ARCHIMANTIS MONSTROSA Wood-Mason.**

Plate xvi, fig. 29-30; xvii, fig. 38.

*Archimantis monstrosa* Wood-Mason, Proc. Zool. Soc. Lond., 1878, p. 583, pl. xxxvi, fig. 1-1b; Westwood, Rev. Mant., 1889, p. 9, pl. iii, fig. 1; *Mantis fuscoelytris* McCoy, Prodr. Zool. Vic., xiii, 1886, p. 4; *Archimantis latizonata* Sjöstedt., Ark. f. Zool., xi, 1918, p. 21, pl. vi, fig. 1a-b.

♂ Smaller than female, brown. Antennae very long. Pronotum as in female, but slightly less dilated, margins strongly serrated. Wings long, hyaline, the fore-margin of elytra reticulated black, and with black spots as in the other sex. Legs concolorous. Length of body, 93 mm., of pronotum, 32 mm., elytra, 54 mm. Roper River (H. E. Warren). Type, male, I. 14069.

*Hab.* Northern Territory: Victoria River (type), Darwin. Stapleton, Roper River, Groote Eylandt, North-west Australia.

The first female from Groote Eylandt (fig. 29) has the pronotum shaped as in the figure of the type. The other specimen (from Roper River) has the pronotum very strongly dilated, and this seems to be the more usual form in the Northern Territory. Sjöstedt's figure of a "male" larva agrees with other larvae of this species in our big series.

### **ARCHIMANTIS STRAMINEA Sjöstedt.**

*Archimantis straminea* Sjöstedt., Ark. f. Zool., xi, 1918, p. 17, pl. v, fig. 4a-b; pl. vi, fig. 2a-3.

*Hab.* North-West Australia.

### **NULLABORA gen. nov.**

Head twice as wide as high, very narrow, concave in front, eyes tapering to a blunt point, vertex straight, eyes depressed, clypeus quadrilateral, fore-margin excavated, facial shield transverse, sides and upper margin sinuate, frons trans-

versely excavated, straight. Antennae fine, ocelli small (female). Pronotum six times longer than wide, fore-margin rounded, a slight constriction, then a slight dilatation before one-third, thence sides parallel to posterior angle, which is a trifle dilated, margins delicately serrate, surface of pronotum smooth. Wings transparent, as long as abdomen. Abdomen moderately slender, parallel-sided, cerci broad, flat, with eleven apparent joints, hairy, apical joint triangular. Anterior coxae long, flattened, thin, margins weakly spined; femora long, armed with four discoidal spines, the second small, third large, inner margin with fifteen spines, outer margin with four, tibia with 14–15 inner and 10–11 outer marginal graduated spines; first joint of the tarsi longer than four following together.

Type, *Nullabora flavoguttata*, from the Nullabor Plains.

In this genus the female is fully winged. The male is unknown.

### NULLABORA FLAVOGUTTATA sp. nov.

Plate xviii, fig. 41, and text figure 376.

♀ Yellowish-green with purplish-brown markings (in dried specimen). Head with frons depressed, whitish. Pronotum smooth, greenish, with a sub-

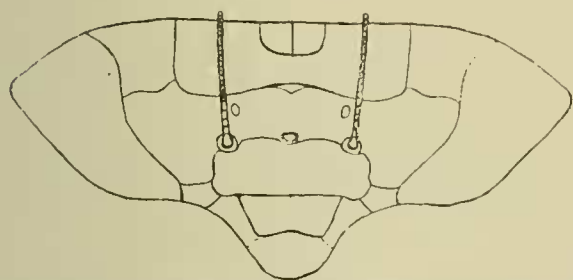


Fig. 376. *Nullabora flavoguttata* sp. nov.  
Head of female.

marginal border of purplish-brown, interrupted at the supracoxal dilatation. Prosternum with broad longitudinal band, black. Wings transparent, fore-margin of elytra green, with a dark sub-marginal line. Abdomen greenish, above with a dark central line of purplish-brown, beneath, at the base of segments 2 to 5, a large median orange spot sur-

rounded by a triangular area of purplish-brown; cerci brownish-black, hairy. Legs greenish, inner face of anterior coxae pale purple. Length, 66 mm., pronotum, 23 mm., wings, 40 mm.

*Hab.* South Australia: Kingoonya (R. Harvey, Type, I. 14070); Northern Territory (Capt. S. A. White).

This peculiar mantis from the desert plains of the north-west of South Australia is probably a grass-frequenting species. It is not apparently close to any other species.

### RHODOMANTIS Giglio-Tos, 1916 (*pulchellus*).

*Rhodomantis* Giglio-Tos, Bull. Soc. Ent. Ital., 1916, p. 45.

*Truxomantis* Sjöstedt, Ark. f. Zool., xi, 1918, p. 31.

**RHODOMANTIS PULCHELLA** Tepper.

Plate xv, fig. 26.

*Pseudomantis pulchellus* Tepper, Trans. Roy. Soc. S.A., 1904, p. 163; *Truromantis kimberleyensis* Sjöstedt., Ark. f. Zool., xi, 1918, p. 33, pl. iii, fig. 4; pl. v, fig. 6.  
*Hab.* South Australia, Western Australia, North-west Australia. Type, I. 13779.

The type, a female, of this species came from the far N.W. of South Australia (Wells Expedition, March, 1903). It is in rather damaged condition. We have a series of seven males and four females. They agree well with Sjöstedt's description and figures. The figure is of a male from Mount Painter.

**RHODOMANTIS QUEENSLANDICA** Sjöstedt.

*Truromantis queenslandica* Sjöstedt., Ark. f. Zool., xi, 1918, p. 31, pl. iii, fig. 3; pl. v, fig. 5.  
*Hab.* Queensland.

**RHODOMANTIS GRACILIS** sp. nov.

Plate xv, fig. 25.

♂ Pale brown. Head similar to *R. pulchella*, ocelli less prominent, antennae much finer. Pronotum very slender, much longer, supracoxal dilatation well forward, margins of pronotum finely serrated, the stem with a median and two lateral longitudinal ridges, armed with coarse spinules. Wings shorter, narrow, reaching two-thirds length of abdomen; elytra hyaline, brownish, with fine scattered blackish spots; hind-wings hyaline, a basal area brownish black, becoming paler outwardly, and with scattered transverse hyaline patches. Cerci longer, and more slender. Legs very long, fine, the anterior femora very slender at base. Length, 43 mm., pronotum, 13 mm., elytra, 19 mm.

*Hab.* Northern Territory: Groote Eylandt (N. B. Tindale), Connexion Island (April, 1922). Type, I. 14063.

Close to *R. pulchella*, from which it differs in its smaller size, longer pronotum, shorter wings, darker base to wings, in the cerci, and the slender femora, not dilated towards base; while the antennae are very much finer. We have two males; one was taken with the sweep net in tall grass on a small coral island west of Groote Eylandt, and the other at Emerald River, Groote Eylandt. The type is figured.

**TENODERA** Burmeister, 1838 (*aridifolia*).

*Hab.* Ethiopian, Oriental, Malayan regions, and Australasia.

**TENODERA INTERMEDIA** Saussure.

Plate xxi, fig. 54.

*Tenodera intermedia* Sauss., Add. Syst. Mant., 1870, p. 233; Mém. Soc. Genève, xxi, 1871, p. 98; Gigli-Tos, Bull. Soc. Ent. Ital., 1911, p. 41; *Tenodera superstitiosa bokiana*, Sjöst., Ark. f. Zool., xi, 1918, p. 22, pl. iv, fig. 5a-b.

*Hab.* Queensland, Northern Territory (Roper River), New Zealand, and New Guinea.

The rather poor example figured is a female from Emerald, Queensland.

**TENODERA AUSTRALASIAE** Leach.

Plate xxi, fig. 55.

*Mantis australasiae* Leach, Zool. Misc., i, 1814, pl. xxxiv; Saussure, Mém. Soc. Genève, xxi, 1871, p. 96; *Mantis darchii* Macleay, King's Survey Aust., ii, 1827, p. 454; *Mantis tessellata* Burm., Handb. Ent., ii, 1838, p. 535.

*Hab.* Australia and Tasmania, New Zealand, New Guinea, and the Molucca Islands.

This is a common species all over Australia; the specimen figured is from Adelaide. The sexes are similar, the male being smaller, and the colour is either grayish-brown or bright green. One specimen taken by the author near Adelaide has the hind-wings almost entirely dark, except for a small area in the centre.

**SPHRODROPODA** Stal, 1877 (*tristis*).

*Hab.* Australia.

**SPHODROPODA TRISTIS** Saussure.

Plate xix, fig. 48.

*Mantis tristis* Sauss., Mém. Soc. Genève, xxi, 1871, p. 93; *Sphodropoda tristis* Westwood, Rev. Mant., 1889, p. 13, pl. x, fig. 2, 9.

*Hab.* Fiji, Queensland, South Australia, Victoria.

There are one male and four females in the collection from South Australia, the female figured is from Mount Bryan (Victoria), and is dark-brown in colour. Giglio-Tos describes the sexes as green, but otherwise agreeing, from Cape York. It is probable that many of the species of *Sphodropoda* and allied genera are dimorphic.

**SPHRODROPODA MOESTA** Giglio-Tos.

*Sphodropoda moesta* Giglio-Tos, Bull. Soc. Ent. Ital., 1911, p. 16.

*Hab.* Cape York.

This appears to be the dark form of *S. tristis*, and the description agrees with specimens so labelled in our collection.

**SPHODROPODA VIRIDIS** sp. nov.

Plate xvii, fig. 34.

♂ Green. Close to *S. tristis*. Head similar, fore-margin of facial shield straight. Shaft of pronotum longer and more slender, prosternum greenish. Wings hyaline, fore-margins opaque, greenish. Fore-wings with stigma obscure, not marked with black, fore-margin beneath reddish. Base of each segment of abdomen beneath with a black median spot, as in *S. tristis*, cerci long, slender, hairy. Anterior coxae green, with a front marginal row of small spines; femora similar to *S. tristis*, two pale brown dots on inner margin, inner face of tibia black. Legs short, stout, green. Length, 41 mm., pronotum, 11 mm., fore-wing, 35 mm.

*Hab.* South Australia: Mount Painter, Flinders Range (H. G. Stokes). Type, I. 14061.

Allied to *S. tristis*, from which it is distinguished by the different anterior coxae and green colour.

**SPHODROPODA MJOBERGI** Sjöstedt.

*Sphodropoda mjobergi* Sjöst., Ark. f. Zool., xi, 1918, p. 25, pl. v, fig. 2, 3.

*Hab.* North-west Australia (Type), Northern Territory (Roper River), Melville Island, Groote Eylandt.

Most of the specimens are dark in colour; we have one female from Point Charles which is green, but is not otherwise distinguishable.

**SPHODROPODA LORIPES** sp. nov.

Plate xviii, fig. 42.

♂ Small, green. Head somewhat triangular, vertex nearly straight, clypeus narrow, transverse, quadrilateral, margins straight, facial shield transverse, five-sided, fore-margin straight, eyes projecting, antennae moderately fine. Pronotum somewhat shape of *S. tristis*, but much narrower and longer in proportion, margins not serrated, surface of pronotum smooth. Wings hyaline, fore-margins opaque, green. Anterior coxae unarmed; femora with four discoidal spines, an interior marginal row of sixteen spines, the first eleven nearly equal sized, the twelfth, fourteenth, and fifteenth small, sixteenth large (in *S. tristis* the spines are alternately large and small), and an outer marginal row of four rather small spines;

tibia armed internally with thirteen, and externally with eleven spines. Legs short, stout, green. Length, 40 mm., pronotum, 13 mm., fore-wing, 30 mm.

♀ Green. Much larger than the male. Head larger, more rounded, vertex strongly arched, eyes less prominent, antennae very fine, ocelli small. Pronotum nearly the shape of *S. tristis* female, but narrower in front, margins serrated. Wings long, broad, opaque, green, traces of a stigma green, margin of fore-wing beneath red. Abdomen rather broad, green. Anterior coxae with a row of about eleven fore-marginal spines; femora armed on inner margin with fifteen spines, arranged as in male; tibia with nine external and thirteen internal marginal spines. Inner face of first tarsal joint black, except at base. Legs green. Length, 52 mm., pronotum, 17 mm., fore-wing, 36 mm.

*Hab.* Queensland: Cunnamulla (H. Hardeastle). Types, I. 14071.

This distinct species, of which we have two examples, is allied to *S. tristis*.

### NGAWALA gen. nov.

Allied to *Sphodropoda*. Head more compressed, facial shield not transverse. Male with wings long, the margins straight, and with a long median opaque stigma on elytra. Females with wings abbreviated, rounded, reaching two-thirds length of abdomen; costal margin of elytra strongly rounded. Anterior tibiae armed externally with thirteen spines, the thirteenth very small.

Type, *Hierodula dentifrons* Stal.

This genus is intermediate between *Parhierodula* and *Sphodropoda*. The name is derived from a native word, "ngawal" (Kakurera tribe), meaning "mantis."

### NGAWALA DENTIFRONS Stal.

Plate xviii, fig. 43-44; xix, fig. 49.

*Hierodula dentifrons* Stal. Bih. Svenska Akad., iv, 1877, p. 56; *Sphodropoda dentifrons* Kirby, Cat. Mant., 1904, p. 242.

♂ Smaller than female. Head and pronotum similar, the margins of pronotum faintly serrated. Wings longer than abdomen; elytra narrow, hyaline, fore-margin green, the hind wings wide, hyaline, the fore-margin green. Anterior coxae green, femora green, with three brown spots on inner margin of femur, and a median brown area. Legs greenish. Length of body, 60 mm., of pronotum, 18 mm., expanse of elytra, 96 mm. Darke Peak, South Australia (R. G. Walsh). Type, male, I. 14059.

*Hab.* South Australia, Central Australia, and Western Australia.

The typical form has a large ferrugineous spot on the inner face of the front femora. In eight female specimens from the interior this is absent.

**PARHIERODULA Giglio-Tos, 1911 (venosa).**

*Hab.* Australasia, extending as far west as Wallace's line.

**PARHIERODULA PUSTULIFERA Wood-Mason.**

Plate xviii, fig. 45; xxi, fig. 52.

*Rhombodera pustulifera* Wood-Mason, Proc. Zool. Soc. Lond., 1878, p. 583, pl. xxxvi, fig. 6, 6a; *Parhierodula pustulifera* Giglio-Tos, Bull. Soc. Ent. Ital., 1911, p. 124.

♂ Smaller than female, green. Head and pronotum similar, antennae somewhat longer, the margins of pronotum plain. Wings longer, hyaline, the elytra much narrowed, with fore-margin less dilated and opaque. Anterior legs orange-coloured on inner face, coxal spines blunt, small, and somewhat widely separated. Length of body, 59 mm., pronotum, 18 mm., elytra, 41 mm. Darwin (W. K. Hunt). Type, male, I. 14062.

*Hab.* Queensland (Torres Strait Islands, type), Northern Territory, Groote Eylandt, Bourn, Obi, and Ké.

The female illustrated was taken on Groote Eylandt. It measures 74 mm. in length.

**PARHIERODULA STERNOSTICTA Wood-Mason.**

*Hierodula sternosticta* Wood-Mason, Journ. Asiat. Soc. Beng., li, 1882, p. 31; *Parhierodula sternosticta* Gigl.-Tos, Bull. Soc. Ent. Ital., 1911, p. 114; *Hierodula biroi* Branesik, Ser. Orth. nov., 1897, p. 61, pl. i, fig. 7a-b; *Hierodula punctipectus* Brunner, Orth. Mal. Arch., 1898, p. 212, pl. xvi, fig. 18.

*Hab.* Australia: Trinity Bay (Wood-Mason), New Guinea.

**PARHIERODULA QUINQUEDENS Macleay.**

Plate xxi, fig. 53.

*Mantis quinquedens* MacL., King's Survey Aust., ii, 1827, p. 454; *Hierodula quinquedens* Saussure, Mém. Soc. Genève, xxi, 1871, p. 78; xxiii, 1873, p. 42, pl. viii, fig. 8, 8a; Wood-Mason, Journ. Asiat. Soc. Bengal, li, 1882, p. 28; *Sphodropoda quinquedens* Kirby, Cat. Mant., 1904, p. 242.

*Hab.* Queensland, Northern Territory, Groote Eylandt.

A Groote Eylandt female is figured. This species is somewhat aberrant, and shows relationship with *Sphodropoda*, but is best retained in the above genus.

**PARHIERODULA DIMORPHA** Werner.

*Hierodula dimorpha* Werner, Abh. Senckenb., xxxiii, 1911, p. 394.

*Hab.* New South Wales.

**PARHIERODULA WERNERI** Giglio-Tos.

*Parhierodula werneri* Gigl.-Tos, Bull. Soc. Ent. Ital., 1911, pp. 112, 128; Sjöstedt, Ark. f. Zool, xi, 1918, p. 28.

*Hab.* Ké Island (Type), North-West Australia.

**PARHIERODULA ATRICOXIS** Wood-Mason.

*Hierodula (Rhombodera) atricoris* Wood-Mason, Proc. Zool. Soc. Lond., 1878, p. 582, pl. xxxvi, fig. 4-4b; *Mantis atricoris* var. *grandis* Wood-Mason, Journ. Asiat. Soc. Bengal, li, 1885, p. 31.

*Hab.* Queensland.

This species is described as having the pronotum strongly dilated in middle and the "whole inner surface of the fore coxae coloured jet black, and the hinder part of the prosternum and the mesosternum symmetrically marked with the same colour."

**PARHIERODULA MAJUSCULA** sp. nov.

Plate xx, fig. 50-51.

♀ Allied to *P. pustulifera*, but larger. Green, the head wider, vertex less strongly arched, eyes more prominent. Pronotum similar in shape, but constricted posteriorly more than in that species. Prosternum green. Wings broad, well rounded; the elytra opaque, pale green, with veins darker green; hindwings hyaline, the apex pale green. Abdomen yellowish, the cerci coarse and not tapering to apex so gradually as in *P. pustulifera*. Anterior coxae green, inner face with base and apex orange, and the middle broadly jet black, foremargin with a row of sharp, oblique, coxal teeth; femora green, with inner face orange-yellow. Legs green. Length of body, 95 mm., pronotum, 30 mm., expanse of elytra, 113 mm.

*Hab.* North Queensland: Cairns (A. M. Lea). Type, I. 14058.

No other species of the genus has black and orange front coxae. In *P. atricoris* the coxae are said to be entirely black on inner face, but the pronotum is figured as of a widely different shape. The prosternum is without markings. This is probably one of the largest Australian mantids. The females figured are from Cairns, and the specimen showing the reverse is the type.

**PSEUDOMANTIS** Saussure, 1869 (*albofimbriata*).*Hab.* Australia.**PSEUDOMANTIS ALBOFIMBRIATA** Stal.

Plate xiv, fig. 23-24.

*Mantis albofimbriata* Stal, Eugenie's Resa. Ins., 1858, p. 312; *Pseudomantis albofimbriata* Sauss., Mém. Soc. Genève, xxi, 1871, p. 34, pl. iv, fig. 7; Giglio-Tos, Bull. Soc. Ent. Ital., 1911, p. 57.

♂ Smaller than female, green. Head as in female, eyes more prominent, antennae longer, ocelli prominent. Pronotum similar, without marginal serrations. Wings, long, greenish, hyaline, with fore-margins opaque. Anterior femora weaker, with a large black spot on inner face. Length of body, 36 mm., of pronotum, 11 mm., of elytra, 28 mm.

*Hab.* Tasmania (Type), New South Wales.

The figures show a female from Sydney and the inner face of a male anterior leg. Both sexes have a black spot on the inner face of the front femora.

**PSEUDOMANTIS VICTORINA** Westwood.

*Pseudomantis victorina* Westw., Rev. Mant., 1889, p. 36, pl. ix, fig. 6.

*Hab.* North Australia.**PSEUDOMANTIS HARTMEYERI** Werner.

*Pseudomantis hartmeyeri* Werner, Fauna Sudw. Austral., iv, 1911, p. 51.

*Hab.* Western Australia.

This species, which was described from larvae, is unknown to me.

**STATILIA** Stal, 1877 (*nemoralis*).*Hab.* Malay Archipelago.

*S. apicalis* is known from Australia, New Guinea, and Africa, a strange case of discontinuous distribution.

**STATILIA APICALIS** Saussure.

*Mantis apicalis* Sauss., Mém. Soc. Genève, xxi, 1871, p. 291; l.c., xxiii, 1872, p. 48; *Statilia apicalis* Stal, Bih. Svenska Akad., iv, 1877, p. 55; Giglio-Tos, Bull. Soc. Ent. Ital., 1911, p. 9; *Pseudomantis apicalis* Kirby, Syn. Cat. Orth, 1904, p. 235.

*Hab.* New South Wales, Queensland.**MANTIS** Linnaeus, 1758 (*religiosa*).*Hab.* Europe, Asia, Africa, and one species from Australia.

**MANTIS OCTOSPILOTA Westwood.**

Plate xxii, fig. 58.

*Mantis octospilota* Westw., Rev. Mant., 1889, p. 35; Giglio-Tos, Bull. Soc. Ent. Ital., 1911, p. 15.

*Hab.* North-west Australia, Western Australia, North-west of South Australia, Queensland, Northern Territory.

The male is figured. The female is larger than the male, and has the wings more opaque. Both sexes have a black spot at the base of inner face of fore-coxae, and the prosternum is also suffused black. It was first described from Adelaide. Specimens from Roper River have the black spots widened into short lateral black bars.

**AUSTROMANTIS Sjöstedt, 1918 (albomarginata).**

*Hab.* Australia.

**AUSTROMANTIS ALBOMARGINATA Sjöstedt.**

*Austromantis albomarginata* Sjöst., Ark. f. Zool., xi, 1918, p. 28, pl. iii, fig. 1-2.

*Hab.* North-west Australia, Northern Territory, Groote Eylandt.

**AUSTROMANTIS GRACILIS Sjöstedt.**

*Austromantis gracilis* Sjöst., Ark. f. Zool., xi, 1918, p. 30, pl. iv, fig. 1.

*Hab.* Western Australia, North-west Australia, Groote Eylandt.

**NOTOMANTIS gen. nov.**

Allied to *Mantis*. Head with vertex straight, eyes prominent, divergent, facial shield strongly transverse. Pronotum with sides depressed, the anterior portion constricted and forming a median ridge. Wings (in the male) rather long, hyaline, the fore-margin of elytra rounded, with traces of a stigma. Abdomen short, the cerci small. Anterior coxae armed with small teeth; the femora rather strong, armed with four short discoidal spines, an inner marginal series of fourteen irregular small spines, and an outer marginal series of four larger spines; tibiae armed externally with eight, internally with eleven graduated spines. Legs long and slender.

Type, *N. chlorophana* sp. nov.

**NOTOMANTIS CHLOROPHANA sp. nov.**

Plate xxii, fig. 57.

♂ Green. Head green, antennae long, stout, black, except at base. Pronotum green, smooth, the margins darker. Wings green, hyaline, the fore-margins opaque, the apex tipped black; the fore-margin of elytra beneath black. Anterior legs green, the apex of coxae and an obscure patch on inner face of

femora darker. Legs green, the base of femora darker green. Length of body, 41 mm., of pronotum, 12 mm., expanse of elytra, 70 mm.

*Hab.* Western Australia: Beverley (F. H. du Boulay). Type, I. 14072, unique.

**TRACHYMANTIS Giglio-Tos, 1916 (obesa).**

**TRACHYMANTIS OBESA Giglio-Tos.**

*Trachymantis obesa* Gigl.-Tos, Bull. Soc. Ent. Ital., 1916, p. 46.

*Hab.* Australia. ?

This species is recorded: "da Hermannsburg nell Africa centrale (Mus Londra)." Hermannsburg is between Oodnadatta and Charlotte Waters, Central Australia.

**DEIPHOBE Stal, 1877 (ocellata).**

*Hab.* India and Australia.

**DEIPHOBE AUSTRALIANA Giglio-Tos.**

*Deiphobe australiana* Gigl.-Tos, Bull. Soc. Ent. Ital., 1915, p. 24.

*Hab.* Australia.

**THORODIA gen. nov.**

Male with head moderately large, about as high as wide, eyes rounded, prominent; vertex strongly arched; facial shield transverse, elevated above; clypeus quadrilateral; sides diverging, hind margin nearly straight; ocelli large, closely

grouped together. Pronotum about four times long as wide; widest at one-fourth, margins anteriorly serrate, a moderate median ridge. Wings long, nearly reaching tip of abdomen, hyaline, coloured. Abdomen slender, parallel-sided, anal appendages large; cerci stout, short, cylindrical, with nine apparent joints, apical joints compressed, clothed with moderately dense setae. Anterior femora moderate, with four discoidal spines, the second very small, also an inner marginal row of fourteen nearly equal spines and an isolated apical spine, outer

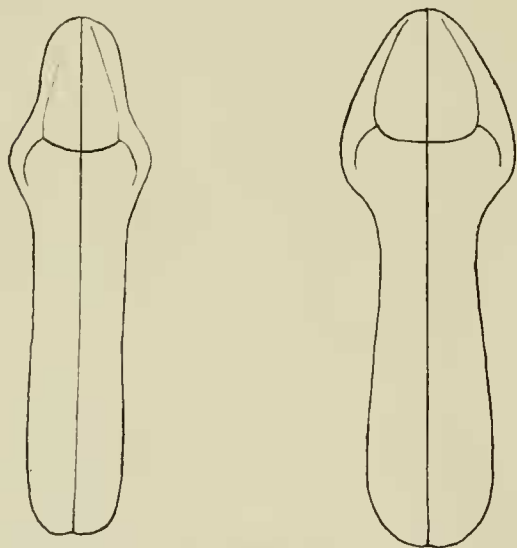


Fig. 377. *Thorodia melanoptera* sp. nov. ♀, and *T. m. major* subsp. nov. ♀.

margin armed with five spines, the second the largest, and the fifth at apex; tibiae armed on inner margin with thirteen graduated spines, the outer with seven or eight; tarsi short, first joint as

long as four following, clothed with fine hairs. Legs slender and rather long. The female is larger, stouter, the pronotum more dilated, wings short, only half length of abdomen, hyaline, coloured, hind-wings semiovate, as wide as long.

Type, *T. melanoptera* sp. nov.

### THORODIA MELANOPTERA sp. nov.

Plate xviii, fig. 46; xxii, fig. 59, and text figure 377.

♂ Brown. Head about as high as wide; clypeus transverse, quadrilateral; facial shield transverse, fore-margin concave, hind-margin produced to a point; ocelli large, rounded, close together; vertex arched, the middle a trifle flattened, forming an elevated transverse rounded ridge, mottled brown. Pronotum narrow, somewhat sparsely punctured in longitudinal rows; a supracoxal dilatation at one-third. Elytra long, hyaline, pale brownish; hind-wings large, hyaline, brownish black, with numerous short transverse whitish lines, fore-margin straight, blackish, opaque, interior to this the wing is very transparent, darkening towards posterior margin. Abdomen brownish, slender, cylindrical, cerci stout, flattened at apex, clothed with fairly dense setae. Fore-coxae margined in front with six weak spines, inner face light brown, with several transverse blackish bands more or less obscure, outer face brownish. Femora brown, sometimes an obscure black spot in femoral groove. Legs brown. Length, 47 mm., elytra, 32 mm., hind-wings, 29 mm.

♀ Dark brown. Head as in male, but larger, ocelli smaller. Pronotum broad, strongly dilated, a slight constriction between supracoxal dilatation and fore-margin. Fore-wings short, rounded, opaque, brownish, with darker veins. Hind-wings short, as wide as long, black, with transverse, short, transparent, whitish lines at veins. Abdomen broad, parallel-sided, brown, cerci coarse, cylindrical, setose, the two apical segments flattened. Anterior coxae and femora mottled brown and black. Legs brown. Length, 61 mm., elytra, 19 mm., hind-wings, 14 mm.

*Hab.* South Australia: Murray River (H. S. Cope), Mindarie, Fowler Bay, Port Augusta, Alford, Halidon, Lameroo, Adelaide, Lucindale (A. M. Lea); Victoria: Kewell.

Types, I. 14064.

### THORODIA MELANOPTERA MAJOR subsp. nov.

Plate xxii, fig. 60; and text figure 377.

♂ Similar to *T. melanoptera*, but larger, head more arched, vertex rounded, smooth; pronotum much wider in proportion, fore-margin narrowed, and the

constriction between fore-margin and the dilatation nearly obsolete. Wings with hyaline transverse marks, generally wider and a trifle more obscurely margined. Length, 58 mm.

♀ Head strongly arched, smooth, no plane area on vertex. Pronotum wider, from supra-coxal dilatation to fore-margin convex, broad, behind dilatation strongly constricted, thence widening to posterior margin, the tubercles on pronotum coarse and conspicuous. The legs appear to be stouter and longer. Length, 65 mm.

*Hab.* South Australia: Kingoonya (R. Harvey), Ooldea (R. T. Maurice); Central Australia: Macdonnell Ranges and Mereenie Bluff (Horn Expedition).

Types, I. 14065.

The males of this desert race of *T. melanoptera* differ most in size, and the females in the shape of the pronotum. We have big series of both races, and there seem to be no intermediates.

#### SUB-FAMILY VATINAE.

#### **PARADANURIA** Wood-Mason, 1877 (*orientalis*).

*Hab.* India and Australia.

•

#### **PARADANURIA** FORTNUMI Westwood.

*Toroderia* (*Paradanuria*) *fortnumi* Westw., Rev. Mant., 1889, p. 41, pl. viii, fig. 7.

*Hab.* North Australia.

#### **AUSTROVATES** Sjöstedt, 1918 (*variegata*).

*Hab.* Australia.

#### **AUSTROVATES** VARIEGATA Sjöstedt.

Plate xxi, fig. 56.

*Austrovates variegata* Sjöst., Ark. f. Zool., xi, 1918, p. 36, pl. iv, fig. 2a-b;

*Heterarchimantis lobata* Wern., Zool. Med. Rijks Mus. Leid., vii, 1922, p. 121.

*Hab.* North-west Australia, Northern Territory.

The figure is of a female from Roper River.

# LITERATURE RELATING TO BIBLIOGRAPHY OF AUSTRALIAN MANTIDAE.

- Blanchard, Voy. au Pole Sud, 1853.  
 Bolivar, Ann. Soc. Ent. Fr., 1897.  
 Branesik, Jahresb. Nat. Ver. Trencs., 1897.  
 Brunner de Wattenwyl, Abhandl. Senckenb., 1893.  
 „ „ „ Revision Syst. Orth., 1893.  
 Burmeister, Handb. Ent., 1838.  
 Chopard, Bull. Soc. Ent. Fr., 1910.  
 Fabricius, Syst. Ent., 1775.  
 Giglio-Tos, Boll. Mus. zool. anat. compar. Torino, 1907, 1914, 1915.  
 „ Bull. Soc. Ent. Ital., 1910, 1911, 1913, 1914, 1915, 1916.  
 „ Genera Insectorum, 1913, 1921.  
 Haan, Temminck Verhandl. Orth., 1842.  
 Jacobson and Bianki, Prem. i Lozhn. Ross. Imp., 1902.  
 Kirby, Ann. Mag. Nat. Hist., 1904.  
 „ Cat. Orthopt. Mant., 1904.  
 Macleay, King's Survey Coasts Aust., 1827.  
 Preudhomme de Borre, Ann. Soc. Ent. Belge, 1883.  
 Saussure, Mém. Soc. Genève, 1871, 1873.  
 „ Rev. Suisse Zool., 1898.  
 „ and Zehnter, Grandidier Hist. Madagascar Orth., 1895.  
 Serville, Ann. Sci. Nat., 1831.  
 „ Hist. Nat. Orth., 1839.  
 Sjöstedt, Ark. f. Zool., 1918.  
 Stal, Bih. Svenska. Akad., 1877.  
 Tepper, Trans. Roy. Soc. S.A., 1904, 1905.  
 Werner, Abh. Senckenberg Ges., 1911.  
 „ Fauna Sudwest Aust., 1912.  
 „ Zool. Med. Rijks Mus. Leid., 1922.  
 Westwood, Revisio Ins. Mant., 1889.  
 Wood-Mason, Cat. Mant., 1889, 1891.  
 „ Journ. Asiat. Soc. Beng., 1882.  
 „ Proc. Zool. Soc. Lond., 1878.

**EXPLANATION OF PLATES.****Plate xii.**

- Fig. 1. *Glabromantis unicornis* sp. nov. Type male.  
2. *Glabromantis unicornis* sp. nov. Type female.  
3. *Glabromantis melania* sp. nov. Type male.  
4. *Cliomantis cornuta* Gigl.-Tos., Darwin, male.  
5. *Paraoxypilus verreauxii* Sauss., Magnetic Island, male.  
6. *Paraoxypilus verreauxii* Sauss., Emerald, female.  
7. *Paraoxypilus armatus* Giglio-Tos, Groote Eylandt. Type male.  
8. *Paraoxypilus armatus* Giglio-Tos, Daly River, female.

**Plate xiii.**

- Fig. 9. *Paraoxypilus tasmaniensis* Sauss., Tasmania, male.  
10. *Paraoxypilus tasmaniensis* Sauss., Adelaide, female.  
11. *Paraoxypilus laticollis* sp. nov. Type male.  
12. *Paraoxypilus laticollis* sp. nov. Type female.  
13. *Paraoxypilus laticollis* sp. nov. Umberatana, female.  
14. *Paraoxypilus tasmaniensis* Sauss., Lillimur, male.  
15. *Cliomantis dispar* sp. nov., Parachilna, male.

**Plate xiv.**

- Fig. 16. *Orthodera marginata* Sauss., Adelaide, male.  
17. *Orthodera marginata* Sauss., Mount Painter, female.  
18. *Orthodera ministralis* Fab., Roper River, female.  
19. *Orthodera ministralis* Fab., Adelaide, female.  
20. *Orthodera ministralis* Fab., left anterior leg, male.  
21. *Orthodera burmeisteri* Wood-Mason, Dalby, female.  
22. *Orthodera burmeisteri* Wood-Mason, right anterior leg, female.  
23. *Pseudomantis albofimbriata* Stal, Sydney, female.  
24. *Pseudomantis albofimbriata* Stal, right anterior leg, male.

**Plate xv.**

- Fig. 25. *Rhodomantis gracilis* sp. nov. Type male.  
26. *Rhodomantis pulchella* Tepper, Mount Painter, male.  
27. *Stenomantis n. biseriata* Westwood, Cairns, female.  
28. *Stenomantis n. biseriata* Westwood, Cairns, male.

**Plate xvi.**

- Fig. 29. *Archimantis monstrosa* Wood-Mason, Groote Eylandt, female.  
30. *Archimantis monstrosa* Wood-Mason, Roper River, female.

- 31. *Archimantis sobrina* Saussure, Cunnamulla, female.
- 32. *Archimantis latistyla* Serville, Adelaide, male.
- 33. *Archimantis armata* Wood-Mason, Cairns, male.

**Plate xvii.**

- Fig. 34. *Sphodropoda viridis* sp. nov. Mount Painter, male.
- 35. *Archimantis quinquelobata* Tepper. Type male.
- 36. *Archimantis quinquelobata* Tepper, Fraser Range, female.
- 37. *Archimantis quinquelobata* Tepper, right anterior leg, female.

**Plate xviii.**

- Fig. 38. *Archimantis monstrosa* Wood-Mason, Stapleton, male.
- 39. *Archimantis minor*, Giglio-Tos, Beverley, female.
- 40. *Archimantis brunneriana* Saussure. Type female.
- 41. *Nullabora flavoguttata* sp. nov. Type female.
- 42. *Sphodropoda loripes* sp. nov. Type female.
- 43. *Ngawala dentifrons* Stal, Yorke's Peninsula, male.
- 44. *Ngawala dentifrons* Stal, left anterior leg, female.
- 45. *Parhierodula pustulifera* Wood-Mason. Type male.
- 46. *Thorodia melanoptera* sp. nov. Murray River, female.

**Plate xix.**

- Fig. 47. *Archimantis latistyla* Serville, Adelaide, female.
- 48. *Sphodropoda tristis* Saussure, Mount Bryan, female.
- 49. *Ngawala dentifrons* Stal, Yeelana, female.

**Plate xx.**

- Fig. 50. *Parhierodula majuscula* sp. nov. Cairns, female.
- 51. *Parhierodula majuscula* sp. nov. Type female, reverse.

**Plate xxi.**

- Fig. 52. *Parhierodula pustulifera* Wood-Mason, Groote Eylandt, female.
- 53. *Parhierodula quinquedens* Macleay, Groote Eylandt, female.
- 54. *Tenodera intermedia* Saussure, Emerald, female.
- 55. *Tenodera australasiae* Leach, Adelaide, male.
- 56. *Austrovates variegata* Sjöstedt, Roper River, female.

**Plate xxii.**

- Fig. 57. *Notomantis chlorophana* gen. and sp. nov. Type male.
- 58. *Mantis octospilota* Westwood, Fortescue River, male.
- 59. *Thorodia melanoptera* gen. and sp. nov. Type male.
- 60. *Thorodia m. major* subsp. nov. Type female.